knowledge of the present day must be put into simple form for the use of the children of the next generation, in order that they may have time to acquire the higher or advanced knowledge that will have to be taught fifty years hence; just as we now teach in the high school that which was appropriate for the university in the days of Galileo and Newton.

## METEOROLOGY IN THE UNIVERSITIES.

For many years Prof. William H. Brewer, of Yale College, has delivered courses of lectures on meteorology in the Sheffield Scientific School. The third edition of the syllabus of lectures was published in December, 1896; a fourth edition dated September, 1899, has lately been received. In this edition 13 lectures are enumerated, covering 190 topics, whereas in the third edition, 15 lectures and 206 topics were given. Some of these topics are merely referred to in the lectures, but are introduced in logical order as suggestions to those students who wish to pursue the subject farther. The titles of the 13 lectures are as follows:

I. Introduction.
II. The Atmosphere.
III. Temperature.
IV. Pressure.
V. Winds and Circulation.
VI. Atmospheric Moisture.
VII. Condensation of Atmospheric Moisture.
VIII. Cyclones and Anticyclones.
IX. Other Storms and Winds.
X. Rainfall and its Distribution.
XI. Public Weather Service.
XII. Atmospheric Electricity.
XIII. Optical Meteorology.

Since the establishment of the school of forestry at Yale College, Professor Brewer's lectures to the students of forestry have included, not merely the above course in meteorology, but also additional lectures on the relations of forestry and meteorology, including the following special subjects:

General conditions necessary to forests; elementary meteorology; forests as related to temperature and its range; to rainfall and its range; to excesses of weather and climate; to the mechanical and chemical nature of soil and groundwater; to the geological character of the surface; to the relief forms of the land; to other geographical features; the geographical distribution of forests; the aspects of forests as related to climate and topography; and the geological history of forests.

## THE WEATHER BUREAU AND THE UNIVERSITIES.

It is difficult to fully record or realize the activity of the Weather Bureau officials in the matter of lectures on meteorology and cognate subjects. We are especially interested in lectures of a highly instructive character delivered to the students in colleges and universities and if the Editor sometimes fails to mention these in the MONTHLY WEATHER REVIEW, he hopes that the respective lecturers will promptly send him a memorandum for publication.

Several lectures have been delivered from time to time by Mr. Charles Stewart of Spokane, Wash.; the last in his series was that delivered on February 24 for the faculty and students at Gonzaga College. The address was illustrated by means of four large charts prepared by Mr. Stewart, who spoke upon the utility of scientific weather observations. Before concluding, Mr Stewart gave replies to questions put by his hearers, whose appreciation was evinced by hearty applause.

A course of five lectures on advanced meteorology was delivered before the students in mathematical physics, at the Johns Hopkins University, May 7–11, 1900, by Prof. F. H. Bigelow of the United States Weather Bureau, on the following topics:

1. A new method of deducing the general equations of motion on the rotating earth.
2. The treatment of the aqueous vapor in barometric and thermodynamic problems.
3. Application of this discussion to the theory of the formation of clouds.
4. The Ferrel and the German types of circulation in the general and the local cyclones.
5. The results of the international cloud observations in the United States, and their indications regarding the circulation of the atmosphere.

The series of lectures on meteorology delivered by Dr. O. L. Fassig, at the Johns Hopkins University, by permission of the Chief of the Weather Bureau, came to a close on March 17, and we make the following extracts from his report on the subject:

> The character of the series was somewhat changed this year. In place of the regular University lectures to a small number of students, the series was placed in the public educational course inaugurated by the University last year. This made it necessary to put the lectures into more popular form; at the same time the size of the class was greatly increased. Last year the class consisted of 7 or 8 University students; this year it comprised about 80 public school teachers and principals and 5 University students. The regular course consisted of 15 class lectures, covering the general subject of meteorology and climatology and the work of the United States Weather Bureau. A supplementary course of 6 lectures was added; in this course I had the generous cooperation of Professor Abbe and of Mr. Walz of the Weather Bureau and of Mr. Page of the United States Hydrographic Office.
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> The period covered by the courses was from January 6 to March 17, 1900, 2 lectures being given each week. Attendance was free to University students and to members of the local office of the Weather Bureau. From others of the class a subscription of $3 was required for the course. An additional fee of $2 was required of those receiving a certificate at the close of a successful written examination.[1]
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> The scope of topics treated may be seen from an inspection of the lecture outlines and illustrative diagrams submitted herewith. A detailed outline of each lecture was printed and given to members of the class. In addition to the printed outlines the chalk plate process was freely used in preparing diagrams to illustrate principles and conditions. The diagrams have given much satisfaction to members of the class, and have added greatly to a better understanding of the subjects treated. Judging from comments made by President Gilman, Dr. Clark, and members of the class, I infer that the course of lectures has given satisfaction.
>
> The members of the class have shown much interest in the subject of meteorology and in the work of the Weather Bureau; it was a source of much encouragement to me to find this interest maintained to the end of the course.
>
> I have from time to time received requests from other members of the Bureau for copies of my lecture notes. Having spent much time and labor in the preparation of my outlines and diagrams, in addition to my notes, and thinking that they may be of some value to my colleagues, I have collected together a few sets like the pamphlet submitted herewith, and have sent them to those Weather Bureau officials who are engaged in similar work at other universities.

## THE CLIMATOLOGY OF CALIFORNIA.

The reports of the California section are rich in valuable climatological data, thus: The number for April contains an article on the climate of Salinas, presumably by Mr. McAdie. The March number contains the summary, by Dr. A. K. Johnson, voluntary observer at that place, on the climatology of San Bernardino. The February number contains one on the climatology of Fresno by Mr. J. P. Bolton, observer, Weather Bureau, at that place. The January number has an article on the climate of Los Angeles by Mr. G. E. Franklin, local forecast official. Doubtless this excellent series will be con-

[1] These fees belong to the University.—C. A.